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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,811	03/09/2004	Barry T. Brinks	502724	2081
23626	7590	06/14/2005		
LEYDIG VOIT & MAYER, LTD. (ROCKFORD OFFICE) TWO PRUDENTIAL PLAZA, SUITE 4900 180 NORTH STESTON AVENUE CHICAGO, IL 60601-6780			EXAMINER FRISTOE JR, JOHN K	
			ART UNIT 3751	PAPER NUMBER

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/796,811

Applicant(s)

BRINKS ET AL.

Examiner

John K. Fristoe Jr.

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3751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-44 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 3/9/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “inner diameter of the initial start position is smaller than the inner diameter of the nozzle throat, the initial start position being downstream of the nozzle throat” of claims 3 and 32 as well as the “inner diameter of the initial start position is smaller than the inner diameter of the nozzle throat, the initial start position being downstream of the nozzle throat” of claims 43 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10, 28 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner what is meant by “the inlet passage starts adjacent to the inlet pipe in a manner that a flow path is eccentric to the inlet pipe such that the flow path at the location adjacent the inlet is as far away as possible from an outlet flange of the outlet”.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 11, 16, 17, 19-23, 35, 37, 38, 39 as far as it is definite, 40, 42, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,413,646 (Platt et al.). Platt et al. disclose a control valve body comprising an inlet (13) having an inlet passage (15), a nozzle area (the portion of element 15 near element 18 in figure 1), a nozzle throat (the step on the contoured surface above element 23), an outlet (17), a diffuser (element 15 near outlet 17) wherein the pressure gradient drops to near zero, the initial start position (23) down stream of the throat, an outlet flange (the flange adjacent outlet 17 in figure 1), wherein the diffuser (element 15 near outlet 17), wherein the contoured restriction (portion of element 15 above neck 23 in

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figure 2) has a pressure gradient that starts near zero and then goes negative, wherein the inlet passage (15) has a curved flow path (12), wherein the inlet passage (15) is shaped such that the radius of curvature measured orthogonal to the flow direction is smaller on the side of the flow path that has a smaller radius of curvature measured parallel to the flow direction than the side of the flow path that has a larger radius of curvature measured parallel to the flow direction (figure 1), wherein the cross section of the inlet passage (15) is elliptical (wherein passage 15 begins to curve), a valve needle (26) having a nearly cylindrical portion (portion that connects to stem 25), further comprising an outward step (corner near element 23), wherein the inlet (13) is orthogonal to outlet (17), a relatively thick boundary portion (the portion of body 11 near element 18), wherein the area gradient curves inwardly and then outwardly, and wherein the cross sectional area of the curved inlet passage starts adjacent the inlet piping (15) in a manner such that a gas flow path is eccentric to the inlet pipe (15) in such that an inlet flow path is as far away as possible from an outlet flange (adjacent outlet 17) of the outlet (17).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9, 10 as far as it is definite, 27, 28 as far as it is definite, 29-34, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,413,646 (Platt et al.) in view of U.S. Pat. No. 6,105,614 (Bohaychuk et al.). Platt et al. discloses the above described control valve comprising an inlet (13) having an inlet passage (15), a nozzle area (the portion of

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element 15 near element 18 in figure 1), a nozzle throat (the step on the contoured surface above element 23), an outlet (17), a diffuser (element 15 near outlet 17) wherein the pressure gradient drops to near zero, the initial start position (23) down stream of the throat, an outlet flange (the flange adjacent outlet 17 in figure 1), wherein the diffuser (element 15 near outlet 17), wherein the contoured restriction (portion of element 15 above neck 23 in figure 2) has a pressure gradient that starts near zero and then goes negative, wherein the inlet passage (15) has a curved flow path (12), wherein the inlet passage (15) is shaped such that the radius of curvature measured orthogonal to the flow direction is smaller on the side of the flow path that has a smaller radius of curvature measured parallel to the flow direction than the side of the flow path that has a larger radius of curvature measured parallel to the flow direction (figure 1), wherein the cross section of the inlet passage (15) is elliptical (wherein passage 15 begins to curve), a valve needle (26) having a nearly cylindrical portion (portion that connects to stem 25), further comprising an outward step (corner near element 23), wherein the inlet (13) is orthogonal to outlet (17), a relatively thick boundary portion (the portion of body 11 near element 18), wherein the area gradient curves inwardly and then outwardly, and wherein the cross sectional area of the curved inlet passage starts adjacent the inlet piping (15) in a manner such that a gas flow path is eccentric to the inlet pipe (15) in such that an inlet flow path is as far away as possible from an outlet flange (adjacent outlet 17) of the outlet (17) but lacks the inlet connected to an inlet pipe having a cross sectional area and wherein the inlet passage has a cross sectional area at a location adjacent the inlet that is smaller than the cross sectional area of the inlet pipe. Bohaychuk et al. teaches a control valve comprising a inlet (4) that has a cross sectional adjacent the inlet (4) that is smaller than the cross sectional area of the inlet pipe (in figure 9 the inlet 4 enlarges near the

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flange which enables it to be connected to a larger pipe. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control valve of Platt et al. by enlarging the inlet pipe adjacent the flange as taught by Bohaychuk et al. in order to connect the control valve to a larger pipe.

8. Claims 13 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,413,646 (Platt et al.) in view of U.S. Pat. No. 4,721,284 (Bankard). Platt et al. discloses the above described control valve comprising an inlet (13) having an inlet passage (15), a nozzle area (the portion of element 15 near element 18 in figure 1), a nozzle throat (the step on the contoured surface above element 23), an outlet (17), a diffuser (element 15 near outlet 17) wherein the pressure gradient drops to near zero, the initial start position (23) down stream of the throat, an outlet flange (the flange adjacent outlet 17 in figure 1), wherein the diffuser (element 15 near outlet 17), wherein the contoured restriction (portion of element 15 above neck 23 in figure 2) has a pressure gradient that starts near zero and then goes negative, wherein the inlet passage (15) has a curved flow path (12), wherein the inlet passage (15) is shaped such that the radius of curvature measured orthogonal to the flow direction is smaller on the side of the flow path that has a smaller radius of curvature measured parallel to the flow direction than the side of the flow path that has a larger radius of curvature measured parallel to the flow direction (figure 1), wherein the cross section of the inlet passage (15) is elliptical (wherein passage 15 begins to curve), a valve needle (26) having a nearly cylindrical portion (portion that connects to stem 25), further comprising an outward step (corner near element 23), wherein the inlet (13) is orthogonal to outlet (17), a relatively thick boundary portion (the portion of body 11 near element 18), wherein the area gradient curves inwardly and then outwardly, and wherein the cross sectional

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area of the curved inlet passage starts adjacent the inlet piping (15) in a manner such that a gas flow path is eccentric to the inlet pipe (15) in such that an inlet flow path is as far away as possible from an outlet flange (adjacent outlet 17) of the outlet (17) but lacks the valve needle has one of a conical step and a spherical step in the outside diameter of the valve needle, the one of the conical step and the spherical step adapted to contact the nozzle throat to provide tight shutoff of gas flow in a fully closed valve position. Bankard teaches a control valve comprising a valve needle having a conical section (52) and a spherical section (50). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control valve of Platt et al. by making the needle with a conical portion and a spherical section as taught by Bankard in order to help the needle seal better in the throat by having a spherical contact surface.

9. Claims 12, 14, 15, 18, 25, 26, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,413,646 (Platt et al.) in view of U.S. Pat. No. 4,707,278 (Breyer et al.). Platt et al. discloses the above described control valve comprising an inlet (13) having an inlet passage (15), a nozzle area (the portion of element 15 near element 18 in figure 1), a nozzle throat (the step on the contoured surface above element 23), an outlet (17), a diffuser (element 15 near outlet 17) wherein the pressure gradient drops to near zero, the initial start position (23) down stream of the throat, an outlet flange (the flange adjacent outlet 17 in figure 1), wherein the diffuser (element 15 near outlet 17), wherein the contoured restriction (portion of element 15 above neck 23 in figure 2) has a pressure gradient that starts near zero and then goes negative, wherein the inlet passage (15) has a curved flow path (12), wherein the inlet passage (15) is shaped such that the radius of curvature measured orthogonal to the flow direction is

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smaller on the side of the flow path that has a smaller radius of curvature measured parallel to the flow direction than the side of the flow path that has a larger radius of curvature measured parallel to the flow direction (figure 1), wherein the cross section of the inlet passage (15) is elliptical (wherein passage 15 begins to curve), a valve needle (26) having a nearly cylindrical portion (portion that connects to stem 25), further comprising an outward step (corner near element 23), wherein the inlet (13) is orthogonal to outlet (17), a relatively thick boundary portion (the portion of body 11 near element 18), wherein the area gradient curves inwardly and then outwardly, and wherein the cross sectional area of the curved inlet passage starts adjacent the inlet piping (15) in a manner such that a gas flow path is eccentric to the inlet pipe (15) in such that an inlet flow path is as far away as possible from an outlet flange (adjacent outlet 17) of the outlet (17) but lacks a tapered transition between the valve stem having a smaller diameter and the nearly cylindrical area. Breyer et al. teach a control valve comprising a valve head (18) having a cylindrical portion (near section 16 in figure 2), a tapered section (the angled portion below the cylindrical portion in figure 1), a valve stem (19) having a smaller diameter, and wherein the nearly cylindrical portion (below section 16 in figure 1) having a length to diameter ration of less than one. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the valve head of Platt et al. by reducing the diameter of the valve stem and having a tapered transition from the valve head to the valve stem as taught by Breyer et al. in order to decrease the throttling caused by the fluid passing by a valve stem with a large diameter.

10. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 4,413,646 (Platt et al.) in view of U.S. Pat. No. 3,889,537 (Khuzai). Platt et al. discloses the

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above described control valve comprising an inlet (13) having an inlet passage (15), a nozzle area (the portion of element 15 near element 18 in figure 1), a nozzle throat (the step on the contoured surface above element 23), an outlet (17), a diffuser (element 15 near outlet 17) wherein the pressure gradient drops to near zero, the initial start position (23) down stream of the throat, an outlet flange (the flange adjacent outlet 17 in figure 1), wherein the diffuser (element 15 near outlet 17), wherein the contoured restriction (portion of element 15 above neck 23 in figure 2) has a pressure gradient that starts near zero and then goes negative, wherein the inlet passage (15) has a curved flow path (12), wherein the inlet passage (15) is shaped such that the radius of curvature measured orthogonal to the flow direction is smaller on the side of the flow path that has a smaller radius of curvature measured parallel to the flow direction than the side of the flow path that has a larger radius of curvature measured parallel to the flow direction (figure 1), wherein the cross section of the inlet passage (15) is elliptical (wherein passage 15 begins to curve), a valve needle (26) having a nearly cylindrical portion (portion that connects to stem 25), further comprising an outward step (corner near element 23), wherein the inlet (13) is orthogonal to outlet (17), a relatively thick boundary portion (the portion of body 11 near element 18), wherein the area gradient curves inwardly and then outwardly, and wherein the cross sectional area of the curved inlet passage starts adjacent the inlet piping (15) in a manner such that a gas flow path is eccentric to the inlet pipe (15) in such that an inlet flow path is as far away as possible from an outlet flange (adjacent outlet 17) of the outlet (17) but lacks having an initial length of the outlet pipe connected to the diffuser having a smaller inner diameter than the outlet pipe inner diameter, thereby extending the diffuser. Khuzai teaches an outlet pipe having a initial length of the outlet pipe (28) having a smaller inner diameter than the outlet pipe inner

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diameter (figure 3, wherein element 32 is pointing). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the control valve of Platt et al. by connecting an outlet pipe that extends the diffuser as taught by Khuzaie in order to decrease turbulence that may occur in the pipe transition.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John K. Fristoe Jr. whose telephone number is (571) 272-4926.

The examiner can normally be reached on Monday-Friday, 7: 00 a.m-4: 30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine R. Yu can be reached on (571) 272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John K. Fristoe Jr.
Examiner
Art Unit 3751

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6/10/05